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What is claimed is:

1. A D/A converting device with an offset compensation function for compensating a DC offset of a D/A converter, comprising:

a comparator for detecting the DC offset of the D/A converter;

a changing switch for selecting a first input mode in which first and second signals, wherein at least one of these signals is an output signal of the D/A converter, are input into first and second input terminals of the comparator respectively, and a second input mode in which the second and first signals are input into the first and second input terminals of the comparator respectively;

offset compensating means for calculating a third compensation value from a first compensation value which is obtained based on an output signal of the comparator in the first input mode and a second compensation value which is obtained based on an output signal of the comparator in the second input mode; and

an offset compensation D/A converter for correcting the output signal of the D/A converter based on the third compensation value.

2. The D/A converting device with the offset

compensation function according to claim 1, wherein the offset compensating means calculates the third compensation value by averaging the first compensation value and another second compensation value which is obtained based on an inverted signal of the output signal of the comparator in the second input mode.

3. The D/A converting device with the offset compensation function according to claim 1, wherein the offset compensating means calculates the third compensation value by averaging the second compensation value and another first compensation value which is obtained based on an inverted signal of the output signal of the comparator in the first input mode.

4. The D/A converting device with the offset compensation function according to claim 1, wherein the offset compensating means calculates the third compensation value by dividing a difference value between the first compensation value and the second compensation value by 2.

5. The D/A converting device with the offset compensation function according to claim 1, wherein the offset compensating means calculates the third

compensation value by dividing a difference value between another first compensation value which is obtained based on an inverted signal of the output signal of the comparator in the first input mode and another second compensation value which is obtained based on an inverted signal of the output signal of the comparator in the second input mode by 2.

6. The D/A converting device with the offset compensation function according to claim 1, wherein the D/A converter is of differential output type that outputs two analog signals whose phases are inverted, and

the first and second signals are two analog signals which are output from the D/A converter.

7. The D/A converting device with the offset compensation function according to claim 1, wherein the D/A converter is of single output type, and

one of the first and second signals is the output signal of the D/A converter, and another thereof has a predetermined reference voltage.

8. The D/A converting device with the offset compensation function according to claim 1, wherein the offset compensating means determines the first and second

compensation values by using a successive approximation method.

9. The D/A converting device with the offset compensation function according to claim 8, wherein the offset compensating means determines the first and second compensation values by changing the input data of the D/A converter one bit by one bit.

10. The D/A converting device with the offset compensation function according to claim 8, wherein the offset compensating means determines the first and second compensation values by using the successive approximation method based on a binary search.

11. The D/A converting device with the offset compensation function according to claim 10, wherein the offset compensating means adds 1/2 to the first and second compensation values when least significant bits of the first and second compensation values are 0, and subtract 1/2 from the first and second compensation values when the least significant bits of the first and second compensation values are 1.

12. An LSI in which the D/A converting device with the

offset compensation function set forth in claim 1 is incorporated.

13. An offset compensation method of a D/A converting device which detects a DC offset of a D/A converter by using a comparator to compensate the DC offset of the D/A converter, comprising the steps of:

obtaining a first compensation value based on an output signal of the comparator in a first input mode in which first and second signals, wherein at least one of these signals is an output signal of the D/A converter, are input into first and second input terminals of the comparator respectively;

obtaining a second compensation value based on an output signal of the comparator in a second input mode in which second and first signals are input into the first and second input terminals of the comparator respectively;

calculating a third compensation value from the first compensation value and the second compensation value; and

correcting an analog output of the D/A converter by an analog output that corresponds to the third compensation value.

14. The D/A converting device offset compensation method, according to claim 13 further comprising the

step of:

calculating the third compensation value by averaging the first compensation value and another second compensation value which is obtained based on an inverted signal of the output signal of the comparator in the second input mode.

15. The D/A converting device offset compensation method, according to claim 13 further comprising the step of:

calculating the third compensation value by averaging the second compensation value and another first compensation value which is obtained based on an inverted signal of the output signal of the comparator in the first input mode.

16. The D/A converting device offset compensation method, according to claim 13 further comprising the step of:

calculating the third compensation value by dividing a difference value between the first compensation value and the second compensation value by 2.

17. The D/A converting device offset compensation method, according to claim 13 further comprising the steps of:

obtaining another first compensation value and another second compensation value based on an inverted signal of the output signal of the comparator in the first and second input modes respectively; and

calculating the third compensation value by dividing a difference value between the another first compensation value and the another second compensation value by 2.

18. An analog signal outputting device which uses the D/A converting device with the offset compensation function set forth in claim 1.